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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,105

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Nadarajah Narendran

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RATNERPRESTIA  
P.O. BOX 980  
VALLEY FORGE, PA 19482

EXAMINER

PAYNE, SHARON E

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,105	<b>Applicant(s)</b> NARENDRAN ET AL.	
	<b>Examiner</b> SHARON E. PAYNE	<b>Art Unit</b> 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1008, 0908, 0808, 0708, 0507, 0606</u> . | 6) <input type="checkbox"/> Other: ____.  |



## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 6/15/06 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the last US reference has the wrong number. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a). (All of the other references were considered.)

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Singer et al. (U.S. Patent 5,813,752).

Regarding claim 1, Singer et al. discloses a source of light for emitting light (abstract); a down conversion material receiving the emitted light and converting the

emitted light into transmitted light and backward transmitted light (abstract); and an optic device configured to receive the backward transmitted light and transfer the backward transmitted light outside of the optic device (Fig. 1, abstract).

Concerning claim 2, Singer et al. discloses the source of light including an LED (abstract).

Regarding claim 3, Singer et al. discloses the down conversion material including a phosphor (abstract).

Concerning claim 4, Singer et al. discloses the optic device including a light transmissive material (34).

Regarding claim 5, Singer et al. discloses the optic device including a lens having a light transmissive property (34).

Concerning claim 6, Singer et al. discloses the optic device being configured to direct light emitted from the source toward the down conversion material (abstract).

4. Claims 1, 7-10 and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Broer (U.S. Patent 6,210,012).

Regarding claim 1, Broer discloses a source of light for emitting light (2); a down conversion material (5) receiving the emitted light and converting the emitted light into transmitted light and backward transmitted light (Fig. 1); and an optic device (3 and 9) configured to receive the backward transmitted light and transfer the backward transmitted light outside of the optic device (Fig. 1).

Regarding claim 7, Broer discloses a light guide (reflector 3) for directing substantially all of the light emitted from the source toward the down conversion material (Fig. 1).

Concerning claim 8, Broer discloses the source of light (2) disposed adjacent the first end of the optic device (Fig. 1).

Regarding claim 9, Broer discloses the down conversion materials (5) adjacent a second end of the optic device (Fig. 1) the second end opposed to the first end (Fig. 1). (The optic device is defined as the portion between the portion delineated by reference number 9 and the portion delineated by reference number 10.)

Concerning claim 10 Broer discloses the optic device being geometrically configured to transmit the reflected light out of the optic device (Fig. 1).

Regarding claim 12, Broer discloses the down conversion material (5) being deposited on a portion of the second end of the optic device (Fig. 1). (See definition of optic device above.)

Concerning claim 13, Broer discloses the down conversion material (5) being deposited to cover substantially the second end of the optic device (Fig. 1).

Regarding claim 14, Broer discloses a collecting device (3 and 4) for collecting the reflected light which is transferred out of the optic device (Fig. 1).

Concerning claim 15, Broer discloses the collecting device including a reflector (3) for directing the reflected light away from the collecting device (Fig. 1).

Regarding claim 16, Broer discloses the source of light (2) adjacent a first end of the optic device (Fig. 1), the down conversion material (5) adjacent a second End of the optic device (Fig. 1), the first end of the optic device adjacent a first end of the reflector (Fig. 1).

Concerning claim 17, Broer discloses the geometrical shape of the optic device including a box-shaped apparatus (4, Fig. 1).

5. Claims 20-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasa et al. (U.S. Publication 2002/0047516 A1).

Regarding claim 20, Iwasa et al. discloses a cylindrical optic including a light transmissive material (Fig. 1); a light radiation source disposed within the cylindrical optic (abstract, Fig. 1); and a down conversion material, disposed at a middle section of and within the cylindrical optic (abstract, Fig. 3A), for at least one of transmitting or reflecting light transmitted by the light radiation source (Fig. 1, abstract, Fig. 3A).

Concerning claim 21, Iwasa et al. discloses the light radiation source including an LED (abstract).

Regarding claim 22, Iwasa et al. discloses the light radiation source (1 LED) disposed adjacent one lateral end of the cylindrical optic (Fig. 1, left).

Concerning claim 23, Iwasa et al. discloses first and second radiation sources (1<sup>st</sup> and 2<sup>nd</sup> LED on left) spaced from each other and both disposed adjacent one lateral end of the cylindrical optic (Fig. 1).

Regarding claim 24, Iwasa et al. discloses the down conversion material including a phosphor for absorbing light in one spectral region and emitting light in another spectral region (abstract). (Fluorescent materials include phosphors.)

Concerning claim 25, Iwasa et al. discloses the down conversion material being disposed substantially parallel to a longitudinal axis of the cylindrical optic (Figs. 1 and 3A).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singer et al. in view of Kano et al. (U.S. Patent 3,875,456).

Regarding claim 18, Singer et al. does not disclose a reflector as described in the claim or a diffuser. Kano discloses a reflector (1) surrounding at least a portion of the optic device (Fig. 2) and a light diffuser (abstract) deposited on top of at least a portion of the reflector (Fig. 2, abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Kano in the apparatus of Singer et al. to collect and diffuse the light as desired.

Concerning claim 19, Singer et al. discloses down conversion material (abstract). Singer does not disclose the configuration described in the claim. Kano discloses conversion material disposed between the source of the light and the reflector (Fig. 2) and the conversion material having a curved shape (Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Kano in the apparatus of Singer et al. to collect and diffuse the light as desired.



8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singer et al. in view of Iwasa et al.

Regarding claim 11, Singer et al. does not disclose a plurality of semiconductor light emitters. Iwasa discloses a plurality of semiconductor light emitters (abstract, Fig. 1).

It would have been obvious to one of ordinary skill in the art to use the configuration of Iwasa et al. in the apparatus of Singer et al. to produce more light.

9. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasa et al.

Regarding claim 26, Iwasa does not disclose at least one light source on each side of the down conversion material. Putting at least one light source on each side of the down conversion material is considered to be an obvious variation. Since the light source and the down conversion material are well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange to light sources to produce light in the desired directions, since rearranging parts requires only routine skill in the art. See MPEP 2144.04.

Concerning claim 27, Iwasa et al. discloses the light sources mounted on at least one substrate (Figs. 2A and 2B).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHARON E. PAYNE whose telephone number is (571)272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sharon E. Payne/  
Primary Examiner, Art Unit 2875